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Are Intervention-Design Characteristics More Predictive than Baseline Participant Characteristics on Participant Attendance to a Paediatric, Community Weight Management Programme?

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BACKGROUND: Approximately 50% of participants complete a paediatric weight management programme, yet the predictors of attendance and dropout are inconsistent. This study investigates subject and intervention-design characteristics associated with attendance at a group based, family weight management programme. SETTING AND SUBJECTS: Secondary data analysis of 2948 subjects (Age 10.4±2.8 years, BMI 26.0±5.7kg/m2, Standardised BMI (BMI SDS) 2.48±0.87, White 70.3%) from 244 MoreLife (UK) programmes. Subjects attend weekly for 10-12 weeks, sessions last 2-3 hours. Sessions include lifestyle guidance and physical activity. METHOD: Subject characteristics (demographics, psychological (body satisfaction & self-esteem) and sedentary behaviour) were gathered at first contact and BMI SDS was noted weekly. Intervention-design characteristics were recorded (year, length (weeks), group size, age segregation and day of session). Attendance was calculated as total number of sessions attended (%). Multivariate linear regression examined predictors of attendance and multiple imputation countered missing data. RESULTS: Average attendance was 59.4%±29.3%. Baseline subject characteristics were ‘poor’ predictors of attendance. Intervention year, group size and day of session significantly predicted attendance (Tables 1 & 2). Yet, the most predictive marker of attendance was a change in BMI SDS during the programme (B = -0.38, 95% CI = -0.43 - -0.33). CONCLUSION: A reduction in BMI was seen to predict greater attendance. However, baseline subject characteristics were weakly associated with attendance, refuting past findings. Dominant intervention characteristics (large groups, weekend sessions and recent delivery) predicted lower attendance. Future programmes may be better informed.

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	B value	SE B	95% Confidence Interval	
			Lower	*Upper*
Constant	.726	.052	.624	.828
Length of Intervention	-.021	.012	-.045	.002
Year of Intervention	-.030***	.005	-.039	-.020
Intervention Group Size	-.041***	.011	-.063	-.019
Intervention Age Groups	-.004	.011	-.025	.017
Day of Intervention	-.052***	.012	-.077	-.028
Gender	.000	.011	-.021	.021
Age (Years)	.004*	.002	.000	.008
IMD Score	-.001**	.000	-.002	.000
White Ethnicity	-.008	.014	-.036	.021
Pre-Existing Medical Condition	-.009	.020	-.049	.030
BMI SDS	-.014*	.006	-.026	-.001
Self-Esteem	.003	.005	-.007	.014
Sedentary Behaviour	-.005	.004	-.013	.003
Body Satisfaction	.000	.000	-.001	.001
Change in BMI SDS	-.377***	.025	-.427	-.328

Note: $\Delta R^2 = 0.092$. *$p \leq .05$, **$p \leq .01$, ***$p \leq .001$

Fig. 1: Predictors of Attendance - Imputed Data

	B value	SE B	95% Confidence Interval	
			Lower	*Upper*
Constant	.721	.078	.569	.873
Length of Intervention	-.049*	.021	-.090	-.007
Year of Intervention	-.021*	.008	-.037	-.005
Intervention Group Size	-.049*	.020	-.089	-.009
Intervention Age Groups	-.032	.021	-.074	.010
Day of Intervention	-.055*	.024	-.102	-.008
Gender	.003	.018	-.032	.038
Age (Years)	.004	.003	-.002	.011
IMD Score	-.001	.001	-.002	.001
White Ethnicity	.018	.019	-.019	.055
Pre-Existing Medical Condition	-.024	.037	-.096	.048
BMI SDS	-.029**	.010	-.050	-.009
Self-Esteem	.009	.008	-.006	.024
Sedentary Behaviour	.001	.005	-.009	.010
Body Satisfaction	.001	.000	.000	.002
Change in BMI SDS	-.350***	.039	-.427	-.273

Note: $\Delta R^2 = 0.095$. *$p \leq .05$, **$p \leq .01$, ***$p \leq .001$

Fig. 2: Predictors of Attendance - Complete Case Data - Purpose of Sensitivity Analysis